

## S E C R E T

## Administrative Support Capabilities

by the

Office of Communications

I. Executive Summary

This report covers the Office of Communications' support to future Directorate efforts as projected in the Long-range Planning Papers. The growth in customer needs for communications support will be matched during the first five years by OC's gains through the Recapitalization Program. OC will need to sustain this level of growth for the remainder of the decade. Maintaining the requisite numbers of qualified professionals to staff the modernized network will continue to be a critical challenge. Few shortfalls in service would be anticipated if this Agency's planning remains on track, but insufficient detail precluded precise resource projections. Ways to close the gaps in service needs are discussed. [redacted] 25X1

II. OverviewA. Past - The (Quiet) Good Old Days

In retrospect, for a number of years communications support to the Agency elements was relatively stable. Low volume narrative teletype circuits were adequate for most applications. The domestic network was almost an afterthought. [redacted] 25X1  
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[redacted] This bold plan would not only avoid trouble, but it would also result in a modern communications system which would be capable of providing expanded service. [redacted] 25X1  
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B. Present - The Convergence of Service and Growth Demands

Nothing lasts forever and the past now seems relatively quiet when compared to the current environment. The long planned improvements will bear fruit just as the Agency is beginning to make a significant expansion in its programs. There is a growing demand for interactive terminals at Headquarters. OC is already installing and relocating over 100 terminals per month in Headquarters. Word processing is now widely used and secondary support to these systems inevitably means significantly higher volume within the narrative message network. OC has major commitments to [REDACTED]

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Earlier policy decisions such as the overseas reductions and the termination of the OC pipeline cause personnel shortages in OC today. All OC disciplines are affected and rapid improvement is not indicated. The current economic climate does, however, ease the recruiting problems for communicators, but engineers and technicians remain in short supply. [REDACTED]

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C. The Recapitalization Era (1982 - 1988)

The equipment replacement program for OC will address both the foreign and domestic sites. Major activities will include [REDACTED]

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OC will be faced with increased competition for both new recruits and existing staff just as it begins to need to enlarge its work force. The private sector, other Agency components and other agencies will shrink the prospective size of the labor pool. This will affect all disciplines with the scarcity of engineers likely being most acute. As the technological demands on tomorrow's operators change, good prospects may be easier to find but much harder to recruit. [REDACTED]

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D. The Future (1988 - 1992)

Current planning requires OC to build on the impetus gained through the recapitalization program for the remainder of the decade. The network will be stronger, more resilient, larger, and more versatile after it is modernized. OC will still need additional funds to replace the new equipment as it ages. The current resource projections through FY-88 must be continued for the remainder of the decade. 25X1

III. Impact and Response to the Phase III Planning Papers

The Long-range Planning Papers describe an ambitious course which would increase the capability of the Agency to meet its mission. As planned, OC is presently implementing a major replacement program which will result in a more modern network. The important issue, therefore, is to compare the demands on OC to its new capabilities to determine if any additional resources are required. 25X1

The thrust of the Planning Papers is quite clear; they describe an ever-expanding customer work force which must use progressively more modern techniques. Technical tools which multiply the customers' effectiveness will also find wider application. This robust growth will challenge OC, requiring that it establish criteria to determine the amount of support. These criteria are (a) the number of people/customers, (b) where they are located, and (c) the technological aspects of the requirement. There are also plateaus in the quantity of support caused by the discrete nature of equipment, people, etc. Of the three criteria, communications support is usually more sensitive to the technological aspects of the requirement. Although differing perspectives result in a lack of detail in the service requirements which is important to OC, the Planning Papers are summarized from the OC standpoint in Attachment A. 25X1

Describing support capacity is as difficult as projecting the rate of growth in customers' requirements. A key question concerns the actual size of the network through the coming years. A precise answer to this technological question is so intricate as to be far beyond the scope of this paper. It would also be impossible to predict either the future creativity that is expected of OC or the eddies in the exponential growth of technical knowledge. By any standard, however, OC's future support capability will be stronger, more resilient, more survivable and, in all respects, more responsive. A conservative view of the future network is contained in Attachment B. 25X1

RESULT IS THE NEW SYSTEM HAD BETTER SERVE THE 82-92 REQUIREMENTS BECAUSE THAT'S ALL WE'RE GETTING & ALL THATS PLANNED FOR.

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A comparison of the rates of growth projected by the two attachments shows that the challenge that OC will face in the coming decade will be to maintain its current high level of service while meeting the changes in customer demands. To do this, OC must continually improve its service profile, modernize its network, and provide the qualified professionals to run that ever-changing network. In choosing its strategy, OC could incrementally improve its capabilities or could radically alter its course. This paper deals with the incremental response while a separate paper suggests alternate approaches. Simply stated, the base-line strategy is for OC to continue on its present course. At best, this strategy will barely achieve adequate support for the customer and at worst, will guarantee falling behind by a predetermined amount each year. 25X1

IV. Resources

The task of comparing Attachments A and B is then reduced to a judgement of whether the robust Agency growth is adequately anticipated by OC's projected network growth. This judgement must be tempered by practical considerations. Will the Congress support the full range of Agency proposals? Will we accurately anticipate the demands placed on us by a changing world? ... by a changing technology? ... by a changing society? Will there be a shift in policy or attitude toward the Agency that will change our course? These questions have no precise answer and yet will affect the judgement more than will the choice of satellite systems. Regardless of the extent of implementation, however, OC will be prepared to support all of the initiatives, provided the growth strategy is allowed to continue by such things as network modernization. 25X1

Generalizations about the shortfalls or divergence in the two curves of growth are straightforward; as new sites are needed by the customer, OC will need to acquire new equipment and more people. More workload at an existing site (caused by either more customers or different technology) will demand additional people but, in general, the modern systems should be adequate. OC planning must allow for midcourse redirections, creative new solutions, some added funds for equipment, and proportionate personnel increases. A precise measure of the shortfalls is not indicated, however, since the Planning Papers were not intended to project tasks down to the program level of detail. Attachment C attempts, however, to address the required resources. This lack of detail notwithstanding, OC's judgement is positive; our growth can be made to stay ahead of the customers' needs for the coming decade. 25X1

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*2ND PAPER  
WITH REFERENCES TO  
STAYING THE COURSE* COMMUNICATIONS - 1982-1992

## EXECUTIVE SUMMARY:

While modernizing the network and enhancing the abilities of the work force will allow the Office of Communications to stay ahead of customers' demands, there are several other innovative things that can be done to significantly improve the level of service. Some are subtle, have high impact, and are relatively inexpensive, such as a change in the recruiting strategy. Others, while capital intensive, can result in long-range cost savings; e.g., replacing the unclassified telephone equipment. Still others are costly, but could significantly enhance such traits as network survivability. Examples of these include

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## INTRODUCTION:

Communications support in the coming decade is the subject of "Administrative Support Capabilities by the Office of Communications," which responds to the Agency's long-range Planning Papers. It describes an equivalent growth in the customers' need for service and OC's capability to provide service. It does not, however, answer some of the more fundamental questions regarding the quality of communications support. This paper will deal with these more subjective areas and is augmented by 10 detailed attachments.

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Previous discussions dealt with the "size of the pipe" that interconnects the Agency sites. This discussion is intended to investigate what can be put into the pipe and how versatility can improve customer service. In reading this paper remember that changes to the capacity of the network are costly, while adding an optional feature within established capacity usually costs less and adds more to the quality of customer service.

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## BACKGROUND:

Just as previous eras were tagged with such names as the Renaissance and the Industrial Revolution, our current era may be known as the Information Era. We have already seen such terms as "information explosion" used to describe the huge volume of data that pervades our environment. American society is moving into a service-oriented economic structure which has the computer as its major tool. People in our society, especially younger people, are adapting to computers and, more importantly, adapting the computer's ability to solve an impressive list of problems. Society wants the computer to be the tool that removes the drudgery from many of its tasks. It is probable that while this new technology promises much, it will fulfill more than it promises. [ ] 25X1

Society is changing because the attitudes of individuals are changing. This can be seen in how each person views such things as a job, career, responsibility, things, toys, tools, etc. Decentralization is an equally valid concept whether discussing computer systems, corporate structures or Federal/state governments. Society's attitude toward the Agency ebbs and flows depending on a number of things, not the least of which is the latest novel/movie, or how they feel about paying taxes. Understanding this environment is important because each bureaucratic level is really only a sub-set of the whole society. [ ] 25X1

## Environment-Customer Perspective

Although society may only now be moving into the information era, the Agency has always been in this business; there is a fundamental need to stay ahead of society in information handling. Our job demands that we collect information well, know how to analyze it, and how to publish our findings. Similarly, the new recruit of tomorrow will be today's computer-literate young person. Both the people and the tasks of the Agency of the future will want the near paperless environment that is currently being forecast. [ ] 25X1

This evolving technology will affect both the Agency's work force and its way of doing business. One way this will be seen is in the diversification of functional elements and the blurring of boundaries of disciplines. This trend is already appearing as the DI reorganizes from specialized groups (e.g., weaponry, economics, agriculture) to generalized groups concentrating on a geographic area. This will also have an effect of disjointing the lines of management and control. Decentralization will be possible and management will find it desirable to disperse some groups of workers. When this happens, the ability to communicate will assume an even greater significance and systems that facilitate communications will become indispensable. [ ] 25X1

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The most significant aspect of the change in technology is that the user and provider of information will be in direct contact with the communications network. In a very real way, this changes the customer into a participant. [ ] 25X1

## Environment-Directorate Perspective

The Directorate must respond with the kinds of support this new customer will need, given that modern attitudes and new technology will influence many aspects of his future endeavors. It is presumed that the types of support service will largely remain the same; e.g., medical, security, communications, payroll, etc. Conversely, the decentralization trends will likely scatter the customer and change the way the DA provides support. Also, the DA's future may involve "charging" for support since Agency resources are not unlimited. This would become difficult as diversification clouds the organizational boundaries. [ ] 25X1

The DA's work force will also change in the future, among other things, to respond to these widely scattered customers. Ideally, to be effective in this environment the DA would need to attract a broadly visioned recruit who can respond in several disciplines, but who has sufficient specialized knowledge to be an expert in one. This could cause the DA's internal organizational lines to become particularly indistinct. On the other hand, certain jobs will demand detailed knowledge and more specialized employees will continue to be needed. This won't be easy since individuals in some professional groupings (i.e., medical, engineering, accounting, etc.) will likely not be interested in other aspects of support. The DA will thus not find recruits willing to be a support generalist who can also remove an appendix. [ ] 25X1

## Environment-OC Perspective

The Office perspective is no different than the perspective of either the customer or the DA. Those sociological changes that affect the whole will obviously also affect OC. However, the dynamic technological growth will have added a double influence on OC's activities since it is already a technical endeavor and the customer will have technical demands. [ ] 25X1

A different kind of communicator will support the new participant/customer of the future; no longer will mechanical tasks occupy the communicator's time. Customer relations, maintenance, training and network connectivity duties will increase. It is probable that a non-OC terminal operator will work the field station of the future and the Office can at last reach its goal of two-person staffing regardless of size of post. The



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communicator of the future will thus be required to become more involved with the customers' problems and respond closely with them to reach a solution. Technical support of the future communicator will require many of today's disciplines. Engineers and technicians will, however, need a broader knowledge of related fields and most will need software expertise. COMSEC support will require psychological as well as technical tools. While it is likely that OC employees will never be involved in medical problems, other aspects of DA support may gravitate to the "on-site technical experts" and their technical support infrastructure. This range of significant shifts in the nature of the OC work force will cause recruiting and follow-up training/education to dominate the attention of the Office management in the coming decade. [ ]

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## DISCUSSION:

The modernization efforts covered elsewhere and the challenge to provide a responsive work force remain dominant in OC's strategy for dealing with the future. Against the uncertainty of predicting the future, however, there are some available alternatives that would position OC well ahead of the customer's perceived need. [ ]

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The global network is large and complex. While there are many constants, the network is best dealt with in smaller groupings. This approach allows similarities in service needs to dominate the discussion without constantly degenerating into exceptions to some generalization. Detailed discussions of the foreign and domestic networks are contained in Attachments 1 and 5, respectively. [ ]

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The foreign network is deriving benefit from the modernization effort, but some significant issues remain to be addressed. The maximum capacity of the satellite system is set by DoD power allocations. Should this restrict the projected customers' growth, then alternate solutions must be sought. One aspect of this question is the Agency's capability to support crisis reporting which may result in a need to acquire new equipments and lease commercial satellite channels. This is discussed in further detail in Attachment 2. There is also a requirement to increase the OC support to non-Staff duties which is explored in Attachment 3. This paper recommends a closer consolidation with Staff communications, an improved management structure, and rebuilding the strategic reserve of equipment. Finally, survivability of the Agency's communications capability is a complex subject, greatly contributing to the concerns regarding the mid-decade vulnerabilities. While several issues are currently under

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review, the most significant of them is the need to build a redundant capability to back up [redacted] This 25X1  
 subject is covered in further detail in Attachment 4. [redacted] 25X1

The domestic network can be further broken down into a discussion of issues with the Headquarters complex and with the domestic outstations. In the metropolitan area there are capacity, capability, scheduling and space issues explored in great detail in the Attachment. Significant suggestions concerning outstations detail the heavy dependence upon commercial service and suggest the employment of satellites to resolve these problems. In any case, there is unprecedented domestic growth projected which will cause many new sites to need communications support. Purchase of long-lead items will become a problem and OC will need to build a reserve of equipment to respond in a reasonable time. [redacted] 25X1

There has been much emphasis placed on the impact technological innovations will have on society and the nature of the Agency's business. How this will influence OC's way of doing its job is further explored in Attachment 6. A companion discussion covering the future automation of the field station (either foreign or domestic) is contained in Attachment 7. This activity is currently supported by a joint effort in the CRAFT program. It could raise some questions regarding the capacity of the total OC network. [redacted] 25X1

The future OC work force will need to be made up of some communications generalists and some specialists. They will need to have specific knowledge of a wide variety of technical systems ranging from computers to diesel-powered generators. They will need a breadth of knowledge to enable them to visualize a global network, and they will still need the dedication and motivation that characterize today's OC employee. A more detailed discussion of this subject is also covered in Attachment 5. Providing cover for OC's work force remains a continuing problem and this subject is discussed in Attachment 9. [redacted] 25X1

Finally, there are new aspects to the traditional technical field of Communications Security (COMSEC). The growing threat of hostile attacks against our people will add to our concerns regarding attacks against our equipment. Both of these subjects are explored in Attachment 10. [redacted] 25X1

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## STRATEGY:

The broad range of issues discussed above provides alternatives which challenge the Office. Many of the proposals would be dealt with in time; all would require a lot of study and work to reduce them to the project level. However, this long list must be consolidated and priorities must be assigned in order to ensure that OC is responsive to future requirements. [ ]

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The Agency has had as one of its major goals the improvement of its communications capability. This priority treatment is reflected in the Phase IV guidance. The Recapitalization Program is a good start at achieving this objective -- but it is only a start. Moreover, the Recapitalization Program is only really intended to maintain the Agency's communications capability through modernization. Ultimate success depends on a willingness to continue replacement indefinitely. We also need to stop eroding the benefits of modernization by reducing funds or spreading/delaying implementation. Indeed, capital replacement and modernization are never-ending parts of maintaining capability. By the same token, growth demands added resources. For OC this means adding both capacity in the network and new equipments at new locations, or adapting to a customer demand for different technology. Finally, only after these other needs are attended to, can we turn our attention to improving capability. This, too, requires still more resources. Therefore, obtaining sufficient resources for these three separate aspects of its endeavors will be OC's principal priority for the coming decade.

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In retrospect, the lessons we learned from some past mistakes in resource acquisition can now guide our strategy. For instance, we learned that one cannot divert funds from maintaining capability to growth areas without threatening the infrastructure that the growth areas depend upon. Similarly, we know that improvement must be subordinated to both maintenance and growth or you have nothing to improve. The strategy then is to aggressively pursue the acquisition of funds and to apply them to all three areas in the balanced (but prioritized) areas of maintaining capability, responding to growth in requirements and improving the service profile. [ ]

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Obtaining personnel resources is critical. Here the Office not only needs the proper numbers of people, it needs the proper mix of individuals with the needed talents and motivation. The task is, therefore, to build the kind of work force that can respond to future requirements. As previously stated, this involves recruiting, retaining, skills training/education, and deploying qualified personnel. [ ]

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The Agency needs communications in both normal and stressed conditions; survivability of the communications capability is OC's second pressing issue. Improving the prospects for a continuance of service will occupy considerable effort during the coming decade. This need presumes that the network is being modernized and that it will contain sufficient capacity for both conditions. In spite of this, the separate issues of satellite utilization, redundant base stations and primary power vulnerabilities at field stations share in importance in dealing with this vexing question.  25X1

Responding to the unprecedented growth in the domestic network will demand a dynamic program supported by new resources. OC must also respond to the customer's plans to automate their offices. This has broad implications to network capacity and personnel skills. Finally, an intelligence organization's communications capability is only useful if it is secure; thus, COMSEC's concerns round out this prioritized list.  25X1

The conclusions suggest a strategy for dynamic improvement of OC's capability. In the coming decade the Office must:

1. Acquire sufficient resources to maintain, grow and improve its capability.
2. Improve prospects for survivability.
3. Deal with domestic network growth.
4. Respond to customer's office automation.
5. Improve/maintain communications security.  25X1

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## Attachment 8

PERSONNEL

## DISCUSSION:

OC organization developed along discrete, heirarchical lines. With some minor exceptions, the Office was organized with a structured, separated T/O with personnel developed according to Panels, or areas of expertise. The anticipated changes in the technical network configuration in the next decade will require the Office to reassess its present recruitment and assignment procedures. After a detailed task analysis, the optimum size of the work force will be determined and specific programs will be started to improve the qualities, skills, and productivity of our personnel. 25X1

Human resource requirements are going to change significantly in the work equation. The productivity and nature of the work force has to change dramatically, since it is not feasible to increase staffing levels ad infinitum. Technology will have provided the potential for increased productivity through the development of powerful, intelligent systems for collection, distribution, analysis and production of intelligence. To be effective, this technology, such as Office Automation Systems, will have to be implemented and operated by personnel who are equally skilled in basic computer as well as telecommunications disciplines. The work force will have to be acquired and managed in a way that permits development of in-depth competence to meet the needs of worldwide service. More than ever, the training and assignment process has to provide an integrated career progression that maintains the growth and currency of a basically technical work force. It would appear that specific programs are needed to realize significant gains in this area. 25X1

Given that personnel should be assigned and developed in an optimal fashion, it will be necessary to constantly examine our organizational structure in order to best manage our work force. It is likely that the hierarchical structure of the 1980s will give way to a hybrid program/functional/matrix alignment that will allow development of in-depth competence and still be reasonably flexible. As in technology applications, systematic personnel management must be aggressively pursued in order to stay abreast of the many advances that are occurring in the work environment. The basic goal must be to have the right person, with the right skills, in the right job. Done effectively, we can bring the programs to the people, rather than being driven to assigning people to "a slot." The end result can be a work force

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that has careers more effectively integrated and interconnected to the development, operation and maintenance of a network which shares similar characteristics. [ ] 25X1

## NEW INITIATIVES:

1. Organization - Specific planning must be devoted to systematic changes which will allow broader development of competence, as well as more flexible application of that competence. [ ] 25X1

2. Study of Personnel Needed - As times change, so do requirements. Monitoring these requirements and tracking the current work force would provide a more effective target for our recruitment efforts. [ ] 25X1

3. Recruiting - Finding and attracting highly qualified personnel continues to be a critical issue. There is a need for making our organization more competitive with private industry in terms of salaries, advancement, benefits, etc. [ ] 25X1

4. Skills Training - In order to maintain the pace of the computer age, we need to direct our efforts to training our personnel in varied skills, utilizing their knowledge, and thereby expanding on their potential for growth and mobility within the organization. [ ] 25X1

5. Education - As the requirements continue to outpace the acquisition of additional staff, it will be necessary to dedicate specific formal time in each career plan to provide additional education. Without specific planned education as an integral part of each career, the work force will become obsolete, burned-out, and will further exacerbate the staffing shortage. [ ] 25X1

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